

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

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| Applicant's or agent's file reference 47478 | FOR FURTHER ACTION <small>See Form PCT/IPEA/416</small> | |
| International application No. PCT/IT2005/000051 | International filing date (day/month/year) 04.02.2005 | Priority date (day/month/year) 09.02.2004 |
| International Patent Classification (IPC) or national classification and IPC INV. B65H19/22 B65H19/30 | | |
| Applicant FABIO PERINI S.P.A. et al. | | |
| <p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 7 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> (<i>sent to the applicant and to the International Bureau</i>) a total of 4 sheets, as follows:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box. <p>b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p> | | |
| <p>4. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Box No. I Basis of the report <input type="checkbox"/> Box No. II Priority <input checked="" type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI Certain documents cited <input checked="" type="checkbox"/> Box No. VII Certain defects in the international application <input type="checkbox"/> Box No. VIII Certain observations on the international application | | |
| Date of submission of the demand 31.08.2005 | Date of completion of this report 21.06.2006 | |
| Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465 | Authorized officer Fachin, F Telephone No. +49 89 2399-2057 | |

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**INTERNATIONAL PRELIMINARY REPORT
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International application No.
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Box No. I Basis of the report

1. With regard to the **language**, this report is based on
 - the international application in the language in which it was filed
 - a translation of the international application into , which is the language of a translation furnished for the purposes of:
 - international search (under Rules 12.3(a) and 23.1(b))
 - publication of the international application (under Rule 12.4(a))
 - international preliminary examination (under Rules 55.2(a) and/or 55.3(a))
2. With regard to the **elements*** of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

Description, Pages

1-19 as originally filed

Claims, Numbers

1-28 filed with telefax on 08.03.2006

Drawings, Sheets

1/7-7/7 as originally filed

- a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. The amendments have resulted in the cancellation of:
 - the description, pages
 - the claims, Nos.
 - the drawings, sheets/figs
 - the sequence listing (*specify*):
 - any table(s) related to sequence listing (*specify*):
4. This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
 - the description, pages
 - the claims, Nos. 12
 - the drawings, sheets/figs
 - the sequence listing (*specify*):
 - any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

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Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:
 - the entire international application,
 - claims Nos. 12
- because:
- the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (*specify*):
 - the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):
 - the claims, or said claims Nos. 12 are so inadequately supported by the description that no meaningful opinion could be formed (*specify*).
- see separate sheet**
- no international search report has been established for the said claims Nos.
 - a meaningful opinion could not be formed without the sequence listing; the applicant did not, within the prescribed time limit:
 - furnish a sequence listing on paper complying with the standard provided for in Annex C of the Administrative Instructions, and such listing was not available to the International Preliminary Examining Authority in a form and manner acceptable to it.
 - furnish a sequence listing in electronic form complying with the standard provided for in Annex C of the Administrative Instructions, and such listing was not available to the International Preliminary Examining Authority in a form and manner acceptable to it.
 - pay the required late furnishing fee for the furnishing of a sequence listing in response to an invitation under Rules 13ter.1(a) or (b) and 13ter.2.
 - a meaningful opinion could not be formed without the tables related to the sequence listings; the applicant did not, within the prescribed time limit, furnish such tables in electronic form complying with the technical requirements provided for in Annex C-bis of the Administrative Instructions, and such tables were not available to the International Preliminary Examining Authority in a form and manner acceptable to it.
 - the tables related to the nucleotide and/or amino acid sequence listing, if in electronic form only, do not comply with the technical requirements provided for in Annex C-bis of the Administrative Instructions.
 - See separate sheet for further details

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Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N) Yes: Claims 1-11,13-28

No: Claims

Inventive step (IS) Yes: Claims 1-11,13-28

No: Claims

Industrial applicability (IA) Yes: Claims 1-11,13-28

No: Claims

2. Citations and explanations (Rule 70.7):

see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

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IAP11 Rec'd PCT/PTO 09 AUG 2006

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1. Reference is made to the following documents:

D1: US-B1-6 565 033
D2: WO 01/72620 A
D3: US-A-5 383 622
D4: WO 94/21545 A

SECTION V

2. The subject-matter of the newly filed independent claims 1 (machine) and 16 (method) satisfies the criterion set forth in Article 33(2) PCT (novelty) because no one of the cited documents anticipated the features related to the electrostatic device and its positioning in the machine (along the core insertion channel).
Therefore also the dependent claims 2 to 11 and 17 to 28 fulfil the criterion set forth in the cited Article.
3. Moreover the subject-matter of the newly filed independent claims 1 (machine) and 16 (method) satisfies the criterion set forth in Article 33(3) PCT (inventive step).
D4, which is considered to represent the closest state of the art, because it anticipates a rewinding machine having an overall structure close to that of claims 1 and 16, does not mention the use of electrostatic devices for the application of the initial free edge to the winding core at the beginning of each winding cycle.

The use and the positioning of the electrostatic source in the rewinding machine (and consequently in the rewinding method) represents the solution of the present application to the problem of providing an efficient system for the application of the initial free edge to the winding core at the beginning of each winding cycle.

D1 describes a rewinding machine similar to that of the present application but the machine of D1 differs, i.a., in that the insertion channel is not formed by a series of parallel spaced apart, flexible members entrained around at least two rollers.

It is true that D1 very generally suggests the use of electrostatic charges but this without indicating the positioning in the machine.

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A person skilled in the art with such generic information would not obviously include the idea of the electrostatic charges in a machine, that of D4, having a different overall arrangement and moreover would not position the electrostatic source where it has been suggested by the independent claims of the present application.

The other documents on record are less relevant than D1 and D4; therefore their combination with D4 would still more unlikely lead a person skilled in art to the claimed invention.

Since the subject-matter of the newly filed independent claims 1 (machine) and 16 (method) satisfies the criterion set forth in Article 33(3) PCT also the subject matter of the dependent claims 2 to 11 and 17 to 28 fulfil the criterion set forth in the cited Article.

4. Finally, since it appears that the claimed invention can be made or used in a technological sense in industry, it is considered to show industrial applicability within the meaning of Article 33(4) PCT.

SECTION VII

5. The requirements of Rule 5.1(a)(ii) PCT are not met because document D4 is not identified in the description and the relevant background art disclosed therein is not briefly discussed.
6. The requirements of Rule 6.2(b) PCT are not met because reference signs in parentheses are not inserted in the claims (both the preamble and characterizing portion) to increase their intelligibility.
7. The requirements of Article 6 PCT are not met because the content of the description from page 4, line 5 to page 5, line 11 is not in conformity with the new claims on file.
8. In the method claim 16 the word "member" has to be introduced before the wording "including a series of ...).

Section III

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9. The new claim 12 contains subject-matter which goes beyond that of the application documents as originally filed (Rule 70 c) PCT). Contrary to the representative's opinion, there is no explicit disclosure in the application documents as originally filed of the additional features of claim 12 according their full formulation. Therefore no comments about Art. 33(2) and (3) PCT are contained here about said claim.

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Amended Claims

1. A rewinding machine comprising: a path for feeding the web material towards a winding system; an interruption member to interrupt the web material at the end of winding of a log; a core insertion channel, defined by a stationary rolling surface and a movable member including a series of parallel spaced apart flexible members entrained around at least two rollers; a core feeder to insert winding cores in succession in said channel; an electrostatic device to electrostatically charge the winding cores and/or the web material in order to produce, due to the electrostatic charges, reciprocal adhesion of the core and the initial free edge of the web material obtained by interruption of the material at the end of winding of each log, characterized in that said electrostatic device includes at least one charge bar connected to a voltage source, said charge bar being positioned along said channel.
2. Rewinding machine according to claim 1, characterized in that said at least one charge bar is controlled and arranged along said channel in a position such that electrostatic charges are applied by said bar to said web material and/or to said core after the core has come into contact with the web material.
3. Rewinding machine as claimed in claim 1, wherein said movable member and said rolling surface are positioned so that when a core is inserted in said channel, the web material is between said core and said movable member and in contact with said movable member.
4. Rewinding machine as claimed in claim 1 or 2 or 3, wherein said movable member is a core feed member.
5. Rewinding machine as claimed in one or more of the preceding claims, wherein one of said at least two rollers around which said belts are entrained is a winding roller forming part of the winding system and around which the web material is entrained, said winding system being a peripheral winding system.
6. Rewinding machine as claimed in one or more of the preceding claims, wherein the interruption member is combined with said flexible members and positioned with respect to said flexible members on the opposite side of the channel, to act on the web material through said flexible members.

7. Rewinding machine as claimed in one or more of the preceding claims, wherein said bar is positioned to electrostatically charge said cores.

8. Rewinding machine as claimed in one or more of the preceding claims, comprising a bar positioned to electrostatically charge said web material.

9. Rewinding machine as claimed in one or more of the preceding claims, wherein one or more charge bars of the electrostatic device are housed between said rollers around which said flexible members are entrained, within a closed path defined by said flexible members.

10. Rewinding machine according to one or more of the preceding claims, wherein said interruption member is arranged between said at least two rollers around which said flexible members are entrained, and act on said web material through said flexible member.

11. Rewinding machine according to claim 10, wherein said at least one charge bar is arranged on a side of said channel opposite said interruption member.

12. Rewinding machine according to one or more of the preceding claims, wherein said stationary rolling surface is formed by a comb-like structure, a charge bar of said electrostatic device being arranged such as to act through said comb-like structure.

13. Rewinding machine as claimed in one or more of the preceding claims, comprising a gluing device for applying glue to the final free edge of the logs.

14. Rewinding machine as claimed in claim 13, wherein said gluing device comprises a glue dispenser to apply glue on said core, which transfers said glue to the web material.

15. A method for the production of logs of wound web material, comprising the following steps: feeding the web material to a winding system; winding a first log of web material around a first winding core; interrupting the web material at the end of winding of said first log, forming a final free edge of said first log and a initial free edge for winding of a second log; adhering said initial free edge to a second core by application of electrostatic charges which produce reciprocal attraction between core and free edge; characterized in that said electrostatic charges are applied after the core has come into contact

with the web material.

16. A method for the production of logs of wound web material, comprising the following phases: feeding the web material to a winding system; winding a first log of web material around a first winding core;
5 interrupting the web material at the end of winding of said first log, forming a final free edge of said first log and an initial free edge for winding of a second log; adhering the initial free edge to a second core by application of electrostatic charges which produce reciprocal attraction between core and free edge; wherein said cores are inserted in an insertion channel defined by a
10 stationary rolling surface and a movable including a series of parallel spaced apart flexible members entrained around at least two rollers; characterized in that the electrostatic charges are applied along said channel.

17. Method as claimed in claim 15 or 16, wherein the core is electrostatically charged.

15 18. Method as claimed in claim 15 or 16, wherein said web material is electrostatically charged.

19. Method as claimed in one or more of the claims 15 to 18, wherein the web material is interrupted after the core has been brought into contact with the web material.

20 20. Method as claimed in one or more of the claims 15 to 19, wherein said web material is interrupted immediately after application of the electrostatic charge.

25 21. Method as claimed in one or more of the claims 15 to 20, wherein the electrostatic charges are applied when the core passes along said channel.

22. Method as claimed in one or more of the claims 15 to 21, wherein said winding system is a peripheral winding system comprising a winding cradle.

30 23. Method as claimed in claim 22, wherein said flexible members are entrained around a winding roller forming part of said winding cradle.

24. Method as claimed in one or more of the claims 15 to 23, wherein glue is applied to the final free edge of said log.

25. Method as claimed in claim 24, characterized in that said glue is applied to said second core and transferred via said core to the web material.

26. Method according to one or more of claims 16 to 25, including the step of arranging a web interruption member between said at least two rollers, said interruption member acting on said web material through said flexible members entrained around said at least two rollers.

5 27. Method according to claim 26, including the step of arranging an electrostatic charge bar along said channel opposite said interruption member.

28. Method according to claim 26 or 27, including the step of arranging an electrostatic charge bar along said channel and between said first and second roller within the closed path defined by said flexible members.

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